

Remarks

Claims 1-5, 7-16, 18-23 and 27-28 are pending in the application. Claims 1-5 and 7-13 are allowed; claims 14, 22, 23, 27 and 28 are rejected; and claims 15, 16 and 18-21 are objected to. Based on the following, reconsideration of the claim rejections is requested.

Claim Rejections—35 U.S.C. § 102

The Examiner rejected claims 14, 22, 23 and 27 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,835,878 (Saito et al.). The Examiner states that Saito et al. describes a nonlinear error-based control for a vehicle that includes: "determining a first speed error ... and applying a first gain to the speed error, thereby producing a speed control system desired acceleration, the first gain being a non-decreasing function of the absolute value of the first error (column 11, lines 22-41)." Applicant respectfully disagrees with the Examiner's interpretation of the Saito et al. reference.

Saito et al. does discuss a vehicle speed control system that calculates a "vehicle speed deviation $V_d = V_o - V_s$ " and a "target acceleration $AT = (1/kc)V_d$ ". (Col. 11, ll. 17-19). As described in Saito et al., "in this embodiment, $kc=8$ ", which makes the value applied to the speed deviation, V_d , a constant value—i.e., it is not *any* function of the speed error, and it is specifically not "a non-decreasing function of the absolute value of the first error," as expressly recited in claim 14. The value of V_d may increase or decrease over any given time, but $1/kc$ remains the same: it is not a function of V_d . The passages of Saito et al. cited by the Examiner—column 11, lines 22-41—describe the application of a gain, G , to an acceleration error to calculate a throttle valve driving speed, S_v . The passage goes on to describe how S_v is converted "into the duration H_d of high level H of PWM pulse" It does not expressly or inherently describe each of the elements of claim 14, and Applicant respectfully submits that the requirements for establishing a *prima facie* case of anticipation have not been met.

As for claim 22, the Examiner states that Saito et al. describes a vehicle that includes "a controller configured to ... determine a first error, and determine a vehicle request,

thereby facilitating control of the at least one torque producing device (acceleration deviation 21), the first error being a difference between a target value of the vehicle parameter and a measured value of the vehicle parameter (step 21 and 21a), the vehicle request being a nonlinear, increasing function of the first error usable to determine an angle of the throttle (step 22)." Applicant again respectfully disagrees with the Examiner's interpretation of Saito et al. In particular, "step 22" describes the writing into a register of a value A_d , not a nonlinear, increasing function of an error as recited in claim 22 of the present application.

As for the value A_d , its absolute value, abs , is used in a "derivative" calculation, wherein a difference between absolute magnitude data taken from successive cycles is calculated. The formula used in Saito et al. is: $dA_d = abs - abs_p$. With such a formula, whenever the difference between abs and abs_p is less than a previous calculation, the function, dA_d , decreases. Thus, Saito et al. does not describe a nonlinear, increasing function of an error; indeed, the function dA_d , to the extent it is a nonlinear function of an error, may decrease over any given time period. This is the opposite of what is recited in claim 22 of the present application, and therefore, Applicant's submit that Saito et al. cannot be said to anticipate claim 22. Claim 23 depends directly from claim 22, and is therefore also believed to be allowable.

Claim 27 has limitations similar to those of claim 22, and expressly recites a vehicle having a controller configured to determine a first error, wherein "the first error [is] a difference between a target value of the vehicle parameter and a measured value of the vehicle parameter, the vehicle request being a nonlinear, increasing function of the first error usable to determine the amount of electricity provided to the motor." As discussed above, the function A_d described in Saito et al., is not a "nonlinear, increasing function", and Saito et al. does not anticipate claim 27.

Claim Rejections—35 U.S.C. § 103

The Examiner rejected claim 28 under 35 U.S.C. § 103(a) as being unpatentable over Saito et al., in view of U.S. Patent No. 6,347,680 (Mianzo et al.). The Examiner relies on Mianzo et al. as teaching control of a throttle for a desired engine speed on a diesel engine, and relies on Saito et al. as teaching the elements similar to those found in claims 22 and 27. As discussed in detail above, the function Ad, described in Saito et al., is not a "nonlinear, increasing function", and even when that reference is combined with Mianzo et al., the combination does not teach or suggest all of the limitations in claim 28. Therefore, Applicant submits that the cited combination does not render obvious claim 28.

Allowable Subject Matter

The Examiner objected to claims 15, 16 and 18-21 as being dependent upon a rejected base claim, but indicated that each would be allowable if written in independent form to include all of the limitations of its respective base claim and any intervening claims. Claims 15, 16 and 18-21 have claim 14 as their base claim; as discussed above, claim 14 is believed to be allowable, and therefore, each of these dependent claims is also believed to be allowable. Applicant thanks the Examiner for the allowance of claims 1-5 and 7-13, and requests allowance of each of the remaining claims.

Respectfully submitted,

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